



INDEPENDENT TESTING LAB

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

Company: MILLER ENERGY COMPANY II, LLC
Name:
ClientProj: ANNUAL INJECTION FLUID ANALYSIS-
GTA ProjNo: 111622-11

Site Addr: EPA-UIC ANNUAL SAMPLES

Sampled By: BOB SHEARS/MECH
Date Rec: 11/16/2022
Time Rec: 4:30 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	STATE BUCKEYE C-4 SWD	11/8/2022	1:10 PM	WATER
2	JOSEPH REED 2 SWD	11/8/2022	1:10 PM	WATER
3	WHITTLE 1 SWD (Q4)	11/8/2022	2:00 PM	WATER
4	STATE BUCKEYE G-1 SWD	11/8/2022	1:30 PM	WATER

ELECTRONIC SIGNATURE REPORT. This is a final report for the following pages of data for the samples specified above. All analysis was performed by the methods stated and all quality control measures required were completed. All quality control information is available upon request.

Kirk Chase

Kirk L. Chase/Chemist
Grand Traverse Analytical
830 Robinwood Court
Traverse City, MI 49686
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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	111622-11
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	1
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE SAMPLED:	11/8/2022
		TIME SAMPLED:	1:10 PM
		DATE RECEIVED:	11/16/2022
	MI	TIME RECEIVED:	4:30 PM
SAMPLED BY:	BOB SHEARS/MECII	SAMPLE MATRIX:	WATER
SAMPLE ID:	STATE BUCKEYE C-4 SWD		

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
BARIUM DISS EPA 6020A	ND	1.0	mg/L (PPM)	MR	12/1/2022	EPA 3005A
CALCIUM DISS EPA 6020A	9,000	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
IRON TOTAL EPA 6020A	ND	10	mg/L (PPM)	MR	12/1/2022	EPA 3020A
MAGNESIUM DISS EPA 6020A	2,900	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
SODIUM DISS EPA 6020A	22,000	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A

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COMPANY: MILLER ENERGY COMPANY II, LLC
 PROJECT NO: ANNUAL INJECTION FLUID ANALYSIS-
 LOCATION: EPA-UIC ANNUAL SAMPLES
 MI
 SAMPLED BY: BOB SHEARS/MECII
 SAMPLE ID: STATE BUCKEYE C-4 SWD

GTA PROJECT NO: 111622-11
 GTA SAMPLE NO: 1
 DATE RECEIVED: 11/16/2022
 TIME RECEIVED: 4:30 PM
 DATE SAMPLED: 11/8/2022
 TIME SAMPLED: 1:10 PM
 SAMPLE MATRIX: WATER

SAMPLE ANALYSIS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	22	10	mg/L (PPM)	TR	12/6/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/6/2022
CHLORIDE EPA 300.0	330,000	2,000	mg/L (PPM)	KC/TR	12/12/2022
pH EPA 150.1 - LAB	5.5	0.10	s.u.	TR	12/6/2022
RESISTIVITY SM 2510A	8.4	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.093	-	-	TR	12/6/2022
SULFATE EPA 300.0	300	50	mg/L (PPM)	KC/TR	12/12/2022
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	11/20/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	320,000	5.0	mg/L (PPM)	TR	12/8/2022

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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	111622-11
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	2
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE SAMPLED:	11/8/2022
		TIME SAMPLED:	1:10 PM
		DATE RECEIVED:	11/16/2022
	MI	TIME RECEIVED:	4:30 PM
SAMPLED BY:	BOB SHEARS/MECII	SAMPLE MATRIX:	WATER
SAMPLE ID:	JOSEPH REED 2 SWD		

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
BARIUM DISS EPA 6020A	ND	1.0	mg/L (PPM)	MR	12/1/2022	EPA 3005A
CALCIUM DISS EPA 6020A	17,000	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
IRON TOTAL EPA 6020A	ND	10	mg/L (PPM)	MR	12/1/2022	EPA 3020A
MAGNESIUM DISS EPA 6020A	3,600	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
SODIUM DISS EPA 6020A	36,000	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A

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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	111622-11
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	2
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE RECEIVED:	11/16/2022
		TIME RECEIVED:	4:30 PM
	MI	DATE SAMPLED:	11/8/2022
SAMPLED BY:	BOB SHEARS/MECII	TIME SAMPLED:	1:10 PM
SAMPLE ID:	JOSEPH REED 2 SWD	SAMPLE MATRIX:	WATER

SAMPLE ANALYSIS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	33	10	mg/L (PPM)	TR	12/6/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/6/2022
CHLORIDE EPA 300.0	330,000	2,000	mg/L (PPM)	KC/TR	12/12/2022
pH EPA 150.1 - LAB	5.9	0.10	s.u.	TR	12/6/2022
RESISTIVITY SM 2510A	1.6	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.088	-	-	TR	12/6/2022
SULFATE EPA 300.0	360	50	mg/L (PPM)	KC/TR	12/12/2022
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	11/20/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	370,000	5.0	mg/L (PPM)	TR	12/8/2022

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 LOD = LIMIT OF DETECTION
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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	111622-11
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	3
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE SAMPLED:	11/8/2022
		TIME SAMPLED:	2:00 PM
		DATE RECEIVED:	11/16/2022
	MI	TIME RECEIVED:	4:30 PM
SAMPLED BY:	BOB SHEARS/MECII	SAMPLE MATRIX:	WATER
SAMPLE ID:	WHITTLE 1 SWD (Q4)		

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
BARIUM DISS EPA 6020A	ND	1.0	mg/L (PPM)	MR	12/1/2022	EPA 3005A
CALCIUM DISS EPA 6020A	8,000	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
IRON TOTAL EPA 6020A	ND	10	mg/L (PPM)	MR	12/1/2022	EPA 3020A
MAGNESIUM DISS EPA 6020A	2,600	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
SODIUM DISS EPA 6020A	22,000	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A

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COMPANY: MILLER ENERGY COMPANY II, LLC
PROJECT NO: ANNUAL INJECTION FLUID ANALYSIS-
LOCATION: EPA-UIC ANNUAL SAMPLES
MI
SAMPLED BY: BOB SHEARS/MECII
SAMPLE ID: WHITTLE 1 SWD (Q4)

GTA PROJECT NO: 111622-11
GTA SAMPLE NO: 3
DATE RECEIVED: 11/16/2022
TIME RECEIVED: 4:30 PM
DATE SAMPLED: 11/8/2022
TIME SAMPLED: 2:00 PM
SAMPLE MATRIX: WATER

SAMPLE ANALYSIS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	33	10	mg/L (PPM)	TR	12/6/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/6/2022
CHLORIDE EPA 300.0	300,000	2,000	mg/L (PPM)	KC/TR	12/12/2022
pH EPA 150.1 - LAB	5.9	0.10	s.u.	TR	12/6/2022
RESISTIVITY SM 2510A	8.2	-	ohms x cm	AS	12/1/2022
SULFATE EPA 300.0	300	50	mg/L (PPM)	KC/TR	12/12/2022
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	11/20/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	340,000	5.0	mg/L (PPM)	TR	12/8/2022

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COMPANY:	MILLER ENERGY COMPANY II, LLC	GTA PROJECT NO:	111622-11
PROJECT NO:	ANNUAL INJECTION FLUID ANALYSIS-	GTA SAMPLE NO:	4
LOCATION:	EPA-UIC ANNUAL SAMPLES	DATE SAMPLED:	11/8/2022
		TIME SAMPLED:	1:30 PM
		DATE RECEIVED:	11/16/2022
	MI	TIME RECEIVED:	4:30 PM
SAMPLED BY:	BOB SHEARS/MECII	SAMPLE MATRIX:	WATER
SAMPLE ID:	STATE BUCKEYE G-1 SWD		

METALS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
BARIUM DISS EPA 6020A	ND	1.0	mg/L (PPM)	MR	12/1/2022	EPA 3005A
CALCIUM DISS EPA 6020A	6,100	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
IRON TOTAL EPA 6020A	ND	10	mg/L (PPM)	MR	12/1/2022	EPA 3020A
MAGNESIUM DISS EPA 6020A	2,900	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A
SODIUM DISS EPA 6020A	25,000	100	mg/L (PPM)	MR	12/1/2022	EPA 3005A

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COMPANY: MILLER ENERGY COMPANY II, LLC
 PROJECT NO: ANNUAL INJECTION FLUID ANALYSIS-
 LOCATION: EPA-UIC ANNUAL SAMPLES
 MI
 SAMPLED BY: BOB SHEARS/MECII
 SAMPLE ID: STATE BUCKEYE G-1 SWD

GTA PROJECT NO: 111622-11
 GTA SAMPLE NO: 4
 DATE RECEIVED: 11/16/2022
 TIME RECEIVED: 4:30 PM
 DATE SAMPLED: 11/8/2022
 TIME SAMPLED: 1:30 PM
 SAMPLE MATRIX: WATER

SAMPLE ANALYSIS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>
ALKALINITY SM 4500CO2D (BICARBONATE)	11	10	mg/L (PPM)	TR	12/6/2022
ALKALINITY SM 4500CO2D (CARBONATE)	ND	10	mg/L (PPM)	TR	12/6/2022
CHLORIDE EPA 300.0	320,000	2,000	mg/L (PPM)	KC/TR	12/12/2022
pH EPA 150.1 - LAB	5.5	0.10	s.u.	TR	12/6/2022
RESISTIVITY SM 2510A	7.7	-	ohms x cm	AS	12/1/2022
SPECIFIC GRAVITY SM 2710F	1.120	-	-	TR	12/6/2022
SULFATE EPA 300.0	370	50	mg/L (PPM)	KC/TR	12/12/2022
SULFIDE SM 4500S D	ND	1.0	mg/L (PPM)	KC	11/20/2022
TOTAL DISSOLVED SOLIDS EPA 160.1	310,000	5.0	mg/L (PPM)	TR	12/8/2022

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CHAIN OF CUSTODY

PROJECT NUMBER Annual Injection Fluid Analysis- SWD/WIW	SITE NAME/ADDRESS	COMPANY/NAME Miller Energy Company II LLC
SAMPLED BY Bob Shears- Route 10	COMPANY Miller Energy Company II LLC	GTA PROJECT # 111622-11

SAMPLE INFORMATION

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS
1	State Buckeye C-4 SWD	11-8-22	1:10 P	Water	Specific Gravity, Sodium, Calcium, Magnesium, Barium, Total Iron, Chloride, Sulfate, Carbonate, Bicarbonate, Sulfide, Total Dissolved Solids, pH, Resistivity
2	Joseph Reed 2 SWD	11-8-22	1:10 P	Water	Specific Gravity, Sodium, Calcium, Magnesium, Barium, Total Iron, Chloride, Sulfate, Carbonate, Bicarbonate, Sulfide, Total Dissolved Solids, pH, Resistivity
3	Whittle 1 SWD (Q4)	11-8-22	2:00 P	Water	Sodium, Calcium, Magnesium, Barium, Total Iron, Chloride, Sulfate, Carbonate, Bicarbonate, Sulfide, Total Dissolved Solids, pH, Resistivity
4	State Buckeye G-1 SWD	11-8-22	1:30 P	Water	Specific Gravity, Sodium, Calcium, Magnesium, Barium, Total Iron, Chloride, Sulfate, Carbonate, Bicarbonate, Sulfide, Total Dissolved Solids, pH, Resistivity

BILL TO: Miller Energy Company II LLC	REPORT TO: Laura Dyke Olivia Lazic
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RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
<i>Casey Wohlbech</i>	11-9-22 @ 4:20	<i>Laura Dyke</i>	11-9-22 4:21 PM
<i>Bob Shears</i>	11-15-22 1:58 PM	<i>Bob Shears</i>	11/15/2022 1:58 PM
<i>Bob Shears</i>	11/10/2022 8:11 AM	<i>Bob Shears</i>	11/16/2022 8:11 AM
<i>Bob Shears</i>	11/16/22 4:30 PM	<i>Bob Shears</i>	11/16/22 4:30

REQUESTED TAT STANDARD 1 BUSINESS DAY 2 BUSINESS DAYS 3 BUSINESS DAYS